No. 763,136. PATENTED JUNE 21, 1904.

J. C. WINTERS.

CAN FILLING MACHINE.

APPLICATION FILED OCT. 8, 1900.

NO MODEL. 3 SHEETS—SHEET 1.

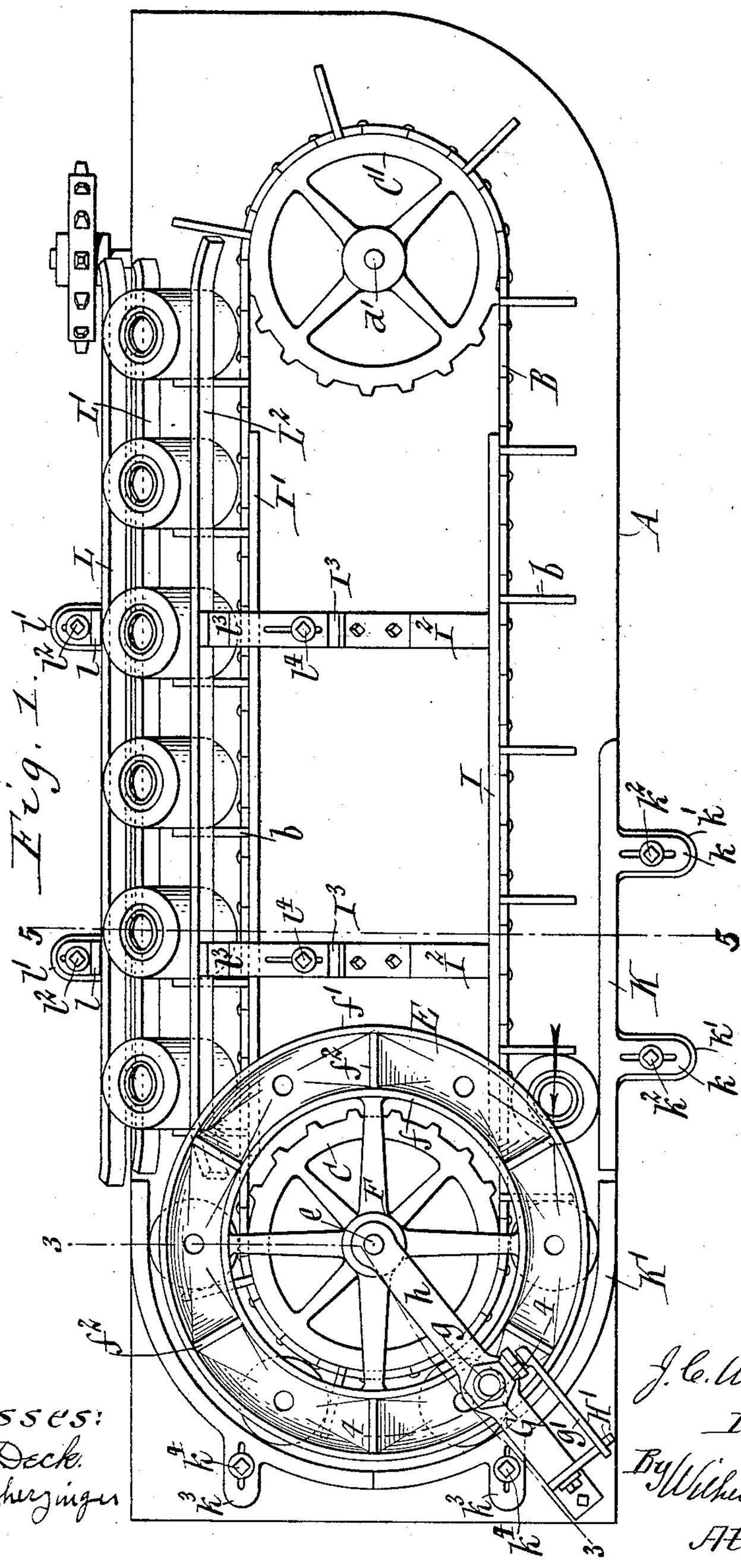

Fig. 1.

Witnesses:
Henry L. Decke.
F. F. Scherzinger

J. C. Winters.
Inventor.
By Wilhelm Bonner
Attorneys.

No. 763,136. PATENTED JUNE 21, 1904.

J. C. WINTERS.

CAN FILLING MACHINE.

APPLICATION FILED OCT. 8, 1900.

NO MODEL. 3 SHEETS—SHEET 2.

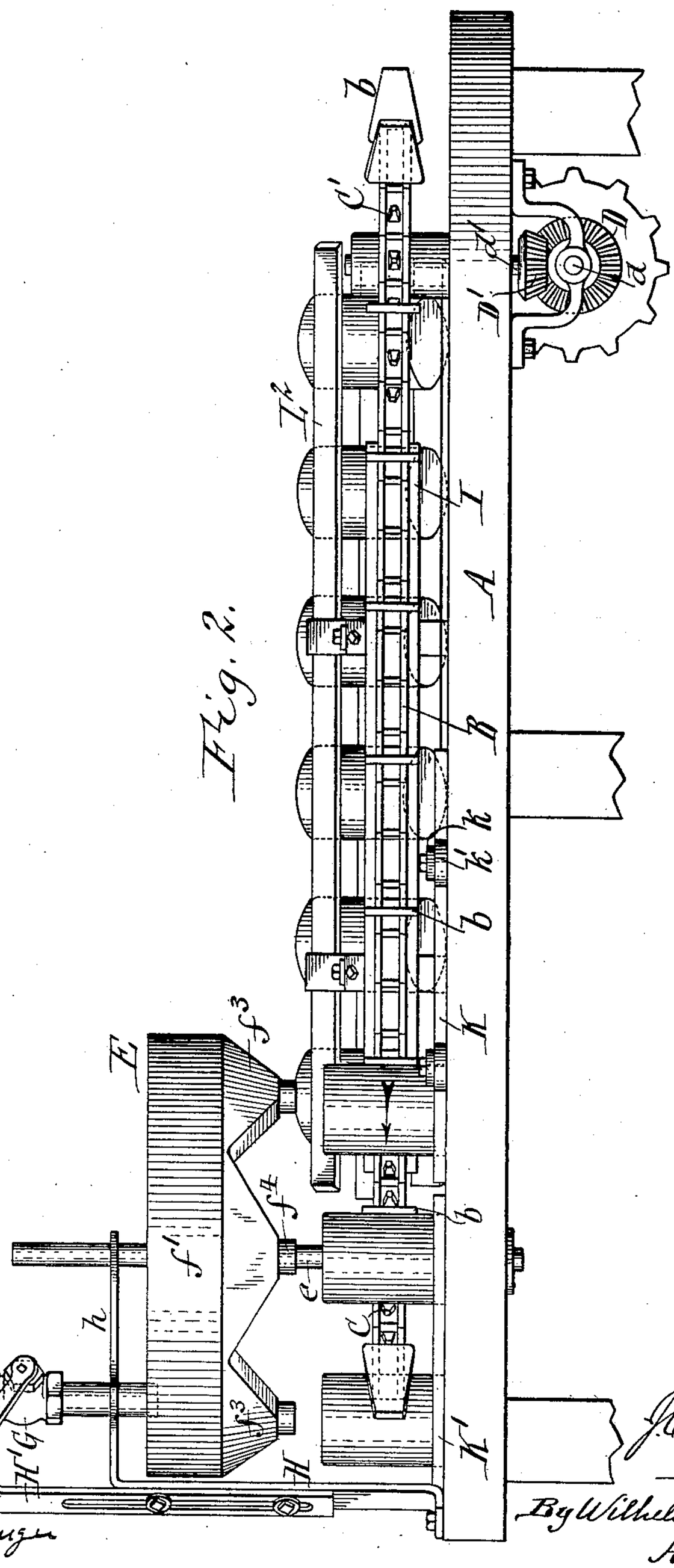

Fig. 2.

No. 763,136. PATENTED JUNE 21, 1904.

J. C. WINTERS.

CAN FILLING MACHINE.

APPLICATION FILED OCT. 8, 1900.

NO MODEL. 3 SHEETS—SHEET 3.

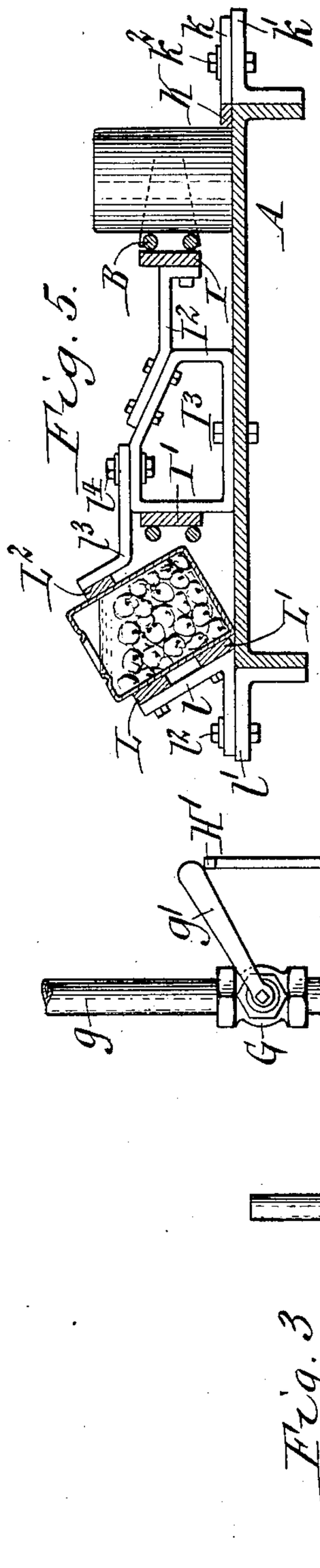

Fig. 5.

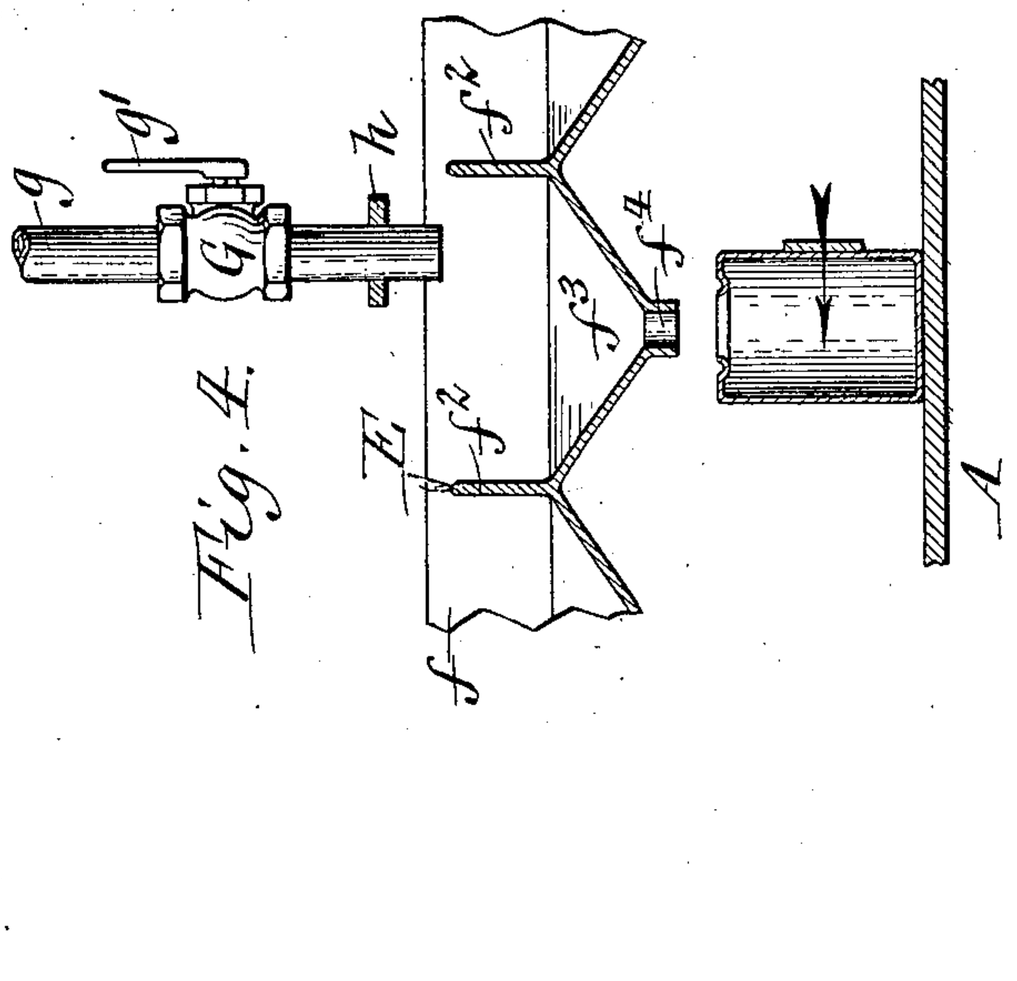

Fig. 4.

Fig. 3

Witnesses:
Henry L. Decke.
F. F. Scherzinger.

J. C. Winters Inventor
By Wilhelm Bonner
Attorneys.

No. 763,136. Patented June 21, 1904.

UNITED STATES PATENT OFFICE.

JOHN C. WINTERS, OF MOUNT MORRIS, NEW YORK.

CAN-FILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 763,136, dated June 21, 1904.

Application filed October 8, 1900. Serial No. 32,372. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. WINTERS, a citizen of the United States, and a resident of Mount Morris, in the county of Livingston and State of New York, have invented a new and useful Improvement in Can-Filling Machines, of which the following is a specification.

This invention relates to a machine for filling cans with a liquid material and regulating the quantity of the material which is put into each can, so that all of the cans are filled to a uniform height or level.

In canning vegetables—for instance, peas, string-beans, &c.—it is customary to first supply each can with the quantity of the vegetable which the can is to contain and then to add brine until the can has been properly filled. In canning fruit a syrup is usually added after the can has been filled with fruit. In order to cap the cans properly, it is necessary that the level of the liquid in the can should not quite reach the top of the can, and it is also necessary that the can should not be short in its contents, but should be filled as far as possible. It is therefore necessary to regulate the level of the liquid in each can nicely, so that it is neither too high nor too low.

The objects of my invention are to provide in a can-filling machine simple and convenient means for supplying the cans with a liquid material and also with simple and convenient means for regulating the height of the liquid in the cans by filling the latter a little more than necessary and then tilting or tipping the cans, so as to spill the surplus of liquid from the same.

In the accompanying drawings, consisting of three sheets, Figure 1 is a top plan view of a can-filling machine embodying my improvements. Fig. 2 is a side elevation thereof. Fig. 3 is a vertical section through the filling device in line 3 3, Fig. 1. Fig. 4 is a vertical section through the filling device in line 4 4, Fig. 1. Fig. 5 is a vertical transverse section through the tilting device in line 5 5, Fig. 1.

Like letters of reference refer to like parts in the several figures.

A represents a horizontal feed-table over which the cans are moved by an endless conveyer-chain B, provided with wings or flights *b*.

C C′ represent two horizontal sprocket-wheels which are arranged over opposite ends of the table and around which the conveyer-chain runs. The wheel C is arranged over the filling end of the table and the wheel C′ over the delivery end. The conveyer-chain may be driven by any suitable mechanism—for instance, as shown, by a horizontal driving-shaft *d*, arranged below the table and geared with the vertical shaft *d′* of the sprocket-wheel C′ by bevel-wheels D D′.

E represents a rotary filler which consists of a horizontal circular series of filling-funnels. This rotary filler is arranged over the sprocket-wheel C and is secured to the vertical shaft *e* of the latter, so as to rotate in unison with the wheel and the conveyer-chain as the latter passes around the wheel. The filler is provided with such a number of funnels and the latter are so spaced or arranged circumferentially that each can while moving with the sprocket-wheel C is surmounted by one of the funnels in such a position that the funnel directs the liquid which it receives into the filling-opening in the top of the can. The filler E consists, preferably, of a spider F, an inner circular wall *f*, an outer circular wall *f′*, radial partitions f^2, which separate the funnels, downwardly-tapering bottoms f^3, arranged between the partitions f^2, and short vertical pipes or nozzles f^4. The latter terminate above the cans and are of such size as to direct the liquid into the filling-openings in the tops of the cans.

g represents the supply-pipe by which the liquid is conducted to the filler. This pipe is provided with a cock or valve G, which is so adjusted that the desired volume of liquid is delivered by the pipe to each funnel during the time which such funnel occupies a position underneath the pipe. Each funnel receives liquid only while it passes underneath the supply-pipe, and this liquid is directed by the funnel into the can underneath the same. The cock or valve is adjusted in any suitable manner. The adjusting device shown in the drawings consists of a standard

H, which is secured to the table and supports with its upper horizontal arm h the lower portion of the supply-pipe, and a stop-bar H′, which is vertically adjustable on the standard H and bears against the handle g' of the valve G. The supply-pipe g extends downwardly somewhat below the top of the inner and outer walls $f\,f'$ of the filler, and these walls are made somewhat higher than the partitions f^2 in order to prevent the liquid from splashing over the walls.

I represents a straight guide-bar arranged upon the feed-table on the feeding side of the same and along the rear side of the conveyer-chain between the two sprocket-wheels C C′ for supporting the back of the chain. I′ is a similar guide-bar arranged on the delivery side of the table between the sprocket-wheels. The guide-bar I is supported by transverse arms I^2, attached to frames I^3, which are secured transversely upon the table A, and the guide-bar I′ is secured directly to said frames.

K is a straight outer guide-bar arranged along the outer edge of the feed-table on the feeding side of the same and in front of the filler, so as to confine the cans in passing to the latter.

K′ is a semicircular guide-bar which forms a continuation of the bar K and extends around the end of the table concentric with the sprocket-wheel C.

The straight guide-bar K is provided with transversely-slotted lugs k, which rest upon lugs k' of the table, to which they are secured by screw-bolts k^2. The semicircular guide-bar K′ is provided with similar slotted lugs k^3, which are arranged lengthwise of the table and secured to the table by screw-bolts k^4. By means of these slotted attaching devices these guide-bars can be adjusted in and out to fit cans of different sizes. The filler E can be correspondingly adjusted in a circumferential direction on the shaft e for placing the funnels in such a position that their discharge-pipes register with the openings of the cans carried by the conveyer, which position varies somewhat with the size of the cans.

The cans stand squarely on their bottoms in being moved along the feeding side of the table and around underneath the filler to the delivery side. After leaving the filler they are tipped or tilted by entering an overhanging guideway or can-channel, which is so arranged that it moves the cans out of the upright position to an inclined position and guides the cans in that position along the delivery side of the table. This overhanging or tilting guideway is preferably composed of two outer guide-bars L L′ and an inner guide-bar L^2. The outer bars are secured to transversely-slotted angle-supports l, which are attached to lugs l' of the table by screw-bolts l^2. The inner guide-bar L^2 is secured to transversely-slotted arms l^3, which are secured by screw-bolts l^4 to the frames or brackets I^3. These guide-bars can be adjusted toward and from the conveyer-chain and toward and from each other, as may be necessary to adjust the guideway to the size of the cans and for other purposes.

The cans are supplied to the conveyer-chain in any suitable manner—for instance, by hand or automatically by means of a rotary feed-table such as is described in Letters Patent No. 657,216, granted September 4, 1900, to Millard J. Hawkins. The cans are then moved by the conveyer-chain in the direction of the arrow to the filler and move with the latter around the filling end of the table. While passing underneath the supply-pipe, each can receives the desired supply of liquid from the funnel above the can, which liquid-supply is so regulated that the can is filled to the top, or practically so. After leaving the filler each can is tilted by the tilting guide, and the surplus liquid is spilled from the can. The angle of the tilting guide is so arranged that only so much liquid is spilled from each can as will lower the level of the liquid in the can to the desired point. When the cans leave the tilting guide, the level of the liquid in the same has been lowered to the desired point and in all of the cans to practically the same point, so that practical uniformity of filling is secured automatically in a very simple manner, requiring no attention on the part of the operator.

A machine of this kind can be used advantageously in a train with a machine for wiping the tops of the cans after they have been filled and with a machine for applying the caps to the cans after the tops of the same have been wiped. A can-wiping machine well suited for this purpose is that described in the Letters Patent above referred to, and a capping-machine well suited for this purpose is that described in United States Letters Patent No. 568,849, granted October 6, 1896, to Millard J. Hawkins.

I claim as my invention—

1. In a continuous can-filling machine, the combination of a conveyer, a filling device for filling the cans while the latter are being moved by the conveyer, and means for tilting the cans while they are being moved by said conveyer to discharge the surplus of their contents, substantially as set forth.

2. In a continuous can-filling machine, the combination of a continuously-moving conveyer, a filling device for filling the cans while the same are moving with the conveyer, and means for tilting the cans while they are being moved by the conveyer to discharge the surplus of their contents, substantially as set forth.

3. In a continuous can-filling machine, the combination of a continuously-moving conveyer, a relatively stationary supply device

for filling the cans while they are being carried past the same by said conveyer, means which moves with the cans for directing the material into the moving cans, and a relatively stationary means for tilting the cans while they are being carried past the same by said conveyer to discharge the surplus of their contents, substantially as set forth.

4. In a continuous can-filling machine, the combination of a continuously-moving conveyer, a stationary liquid-supply nozzle from which the liquid flows uninterruptedly and past which the cans are carried by said conveyer, a series of continuously-moving open-ended funnels for directing the liquid from said nozzle into the cans while they are being moved past the nozzle by said conveyer, and means for discharging the surplus liquid from said cans while they are being moved by said conveyer, substantially as set forth.

5. In a continuous can-filling machine, the combination of a continuously-moving conveyer, a stationary liquid-supply nozzle from which the liquid flows uninterruptedly, and past which the cans are carried by the conveyer, means for directing the liquid from said nozzle into the cans while they are being moved past the nozzle by said conveyer, and means for tilting the cans while they are being moved by said conveyer to discharge the surplus of their contents, substantially as set forth.

6. In a continuous can-filling machine, the combination of a traveling conveyer, a supply device past which the cans are carried by the conveyer, a series of open-ended funnels movable with the cans past said supply device for directing the material into the cans, and an overhanging guideway through which the filled cans are moved and in which the cans are tilted while they are being moved by said conveyer to discharge the surplus of their contents, substantially as set forth.

7. In a continuous can-filling machine, the combination of a traveling conveyer for the cans, a liquid-supply pipe, a continuously-rotating circular series of connected open-ended funnels for directing the liquid from the supply-pipe into the cans while they are being moved past said supply-pipe by said conveyer, and means for discharging the surplus liquid from said cans while they are being moved by said conveyer, substantially as set forth.

8. In a continuous can-filling machine, the combination of a continuously-moving conveyer for the cans, a continuous liquid-supply, means for directing the liquid into the cans while they are being moved by said conveyer, and means for tilting the cans to discharge the surplus of their contents while being moved by said conveyer, substantially as set forth.

9. In a continuous can-filling machine, the combination of a continuously-moving conveyer for the cans, a continuous liquid-supply, a movable means for directing the liquid into the cans while they are being moved by said conveyer, and means for tilting the cans to discharge the surplus of their contents while being moved by said conveyer, substantially as set forth.

Witness my hand this 26th day of September, 1900.

JOHN C. WINTERS.

Witnesses:

JOHN M. PROPHET,

S. L. ROCKFELLOW.